Texas Highways

June, 1957

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DO YOU KNOW TEXAS?

Gordon Shearer
State Parks Board

June has been a month of the year historically important to Texas. On June 16, 1836, the independence of Texas from Mexico was formally recognized. On June 23, 1845, the Congress of the Republic of Texas consented to annexation to the United States and in June 1865, Negro slaves were freed. More important in deciding the course of Texas was an event that occurred in June of 1821 in Missouri. In that month Moses Austin died at Hazel Run, Missouri, and the colonization that Moses Austin had planned between the Colorado and Brazos Rivers was taken up by his son, Stephen Fuller Austin, "Father of Texas."

A spur road turning off U. S. 90 between Sealy and the Brazos River bridge, west of Houston, leads to the old town of San Felipe de Austin and Stephen F. Austin State Park where a large bronze statue by Sculptor John Angel perpetuates the memory of Austin's deeds. It was erected as a Centennial memorial.

San Felipe de Austin, as it was named by Mexican Governor Luciano Garcia, has been shortened to San Felipe. The community, once the colonial capital and hub of political activity in Texas, also has shrunk in size. A sunken ferryboat at the foot of San Felipe's Commercio Plaza is a reminder that the Yellowstone, the Cayuga, the Lively, the San Felipe, and other boats once docked there. A well dug by the colonists in 1824 is a remaining part of the settlement, also San Felipe Church, the upper story of which housed San Felipe de Austin Masonic Lodge. City officials still meet in the old Town Hall.

Replicas and markers memorialize other historical sites. In the same enclosure as the Austin Statue are two other smaller monuments. One was erected by the school children of Austin County in 1928. The other is a memorial to John Bricker, only Texan slain in a skirmish between Texas and Mexican forces at San Felipe on April 7, 1836. Bricker was killed by a cannon ball.

In the enclosed area is also a replica of Stephen F. Austin's only home in Texas – a two-chimneyed log cabin, cared for by a local historical association. Site of the original cabin on nearby Ballinger Creek has a marker. Another marker designates the site of Convention Hall where the Texas colonists gathered in 1832 and in 1833 and in the Consultation of 1835 to agree on their course of action. San Felipe makes claim to a number of Texas "firsts." Residents say the first book published in Texas was printed there; that the Texas Rangers had their origin in San Felipe's Committee of Public Safety; that the postal system in Texas originated there. It is pointed out, also, as the site of the first Sunday School, the first English school, and the home of the first Texas newspaper.

A public commons for grazing was one of the features of the early settlement. Some residents still claim the right of public grazing for their stock.

Large picnic grounds and rest rooms are maintained for public use in a small park at the foot of Commercio Plaza and in the main grove beyond the golf course.

Texas Highways

Volume 4 • Number 8

June, 1957

Contents

WASHO Time in Texas	2
Clay-Lime Stabilization	5
Bridge Opening, Texas Style	9
Hazards in Highway Making	13
Land Values Along the Freeway	15
Texas' Highway Commission	21
Forty Years in Review	22
Over the Highways	31

Five days which highway officials from all parts of the west may use to exchange professional ideas, both in the serious setting of technical speech-making and in the more lively atmosphere of social dinners and leisure-time activities, is in store for the highway officials who attend the 1957 WASHO Convention in June.

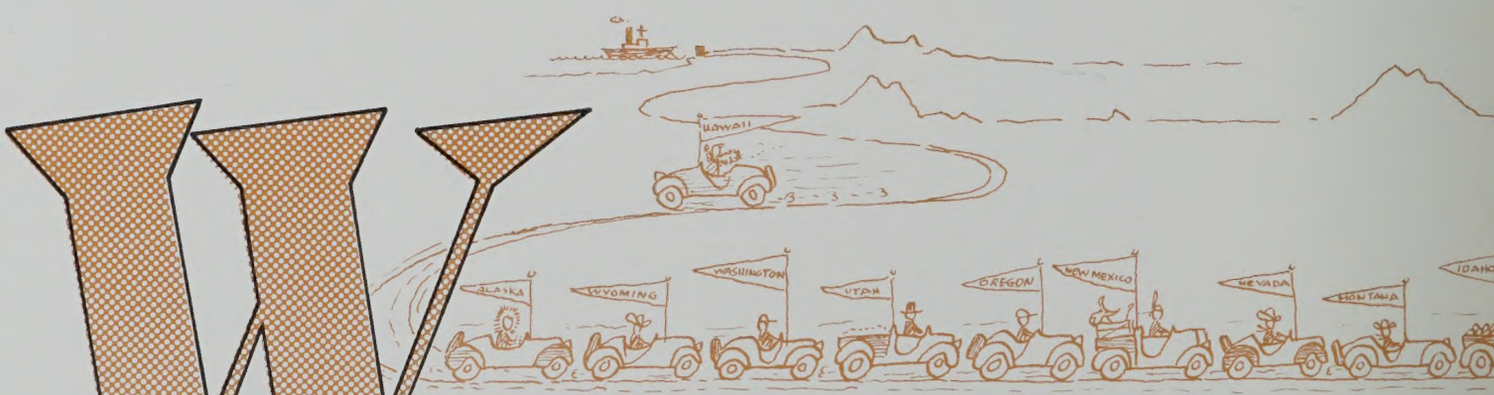
Texas will be host to the thirty-sixth annual convention of the Western Association of State Highway Officials, June 10-14 in Houston. Half a thousand or more representatives from twelve western states, Alaska, and Hawaii will attend the four-day interchange, which this year will be programed in two half-day general assemblies, with the remainder of the convention conducted as group meetings.

A welcome to Texas from Governor Price Daniel and greetings from Houston's mayor, Oscar Holcombe, are part of the planned opening ceremonies. D. C. Greer, State Highway Engineer of Texas and President of WASHO, will open the convention Tuesday, June 11, at 9:30 a.m. Registration for the convention begins Monday, June 10, at 3 p.m. at the Shamrock Hilton.

Distinguished highway authorities who will address the convention include Bertram D. Tallamy, Federal Highway Administrator of Washington, D. C., and W. A. Bugge, president of the American Association of State Highway Officials. Talks encompassing the nation's proposed thirteen-year $33 million highway program as viewed by an administrator, a highway designer, a construction engineer, and a right of way engineer are planned as the feature of the general assembly session June 12. WASHO vice-president, William E. Willey, will preside. Highlight of the final general assembly on Thursday, June 13, will be presentation of the Dr. L. I. Hewes Award. This honor is given annually in recognition of the outstanding highway engineer who made the greatest contribution to western highway development. It commemorates the achievements in behalf of western highways of the late Dr. Hewes, who was Western Regional Chief of the U. S. Bureau of Public Roads and one of the principal organizers of WASHO. Winners are selected by the Executive Committee from a list of candidates submitted by the participating state organizations. Last year the award was divided between A. J. Sachse, Senior Resident Engineer of Idaho, and Robert C. O'Connell, Traffic Engineer from Wyoming. Co-winner Sachse was honored for engineering versatility in connection with the construction of the mile-long bridge and mile-long hydraulic fill at Sandpoint, Idaho. O'Connell shared the award for his instrumental work in preparing a uniform traffic code for Wyoming and for numerous contributions to traffic control and safety in his state.

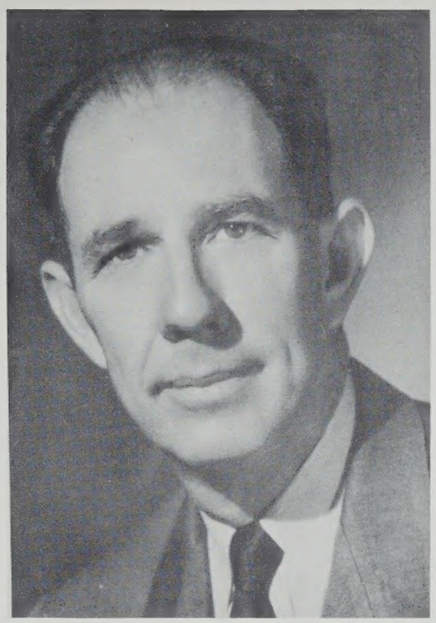
President Greer has served as Texas State Highway Engineer since 1940. He has been with the Department since 1927 in capacities ranging from Field Engineer to Engineer of Construction and Design. A civil engineering graduate of Texas A & M College, Greer was formerly city engineer of Athens, Texas.

Other WASHO officers serving

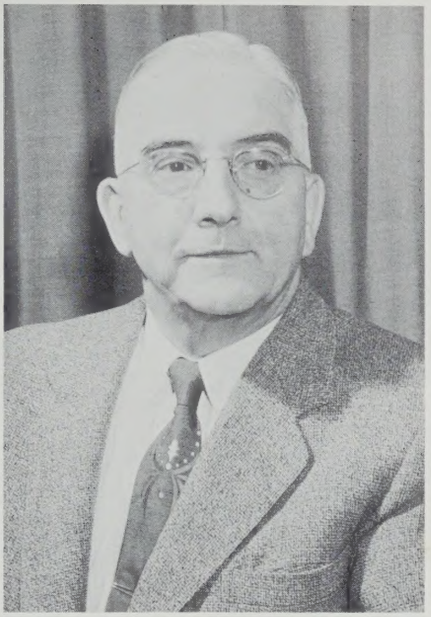


WASHO Time

D. C. Greer, WASHO President, is State Highway Engineer of the Texas Highway Department.



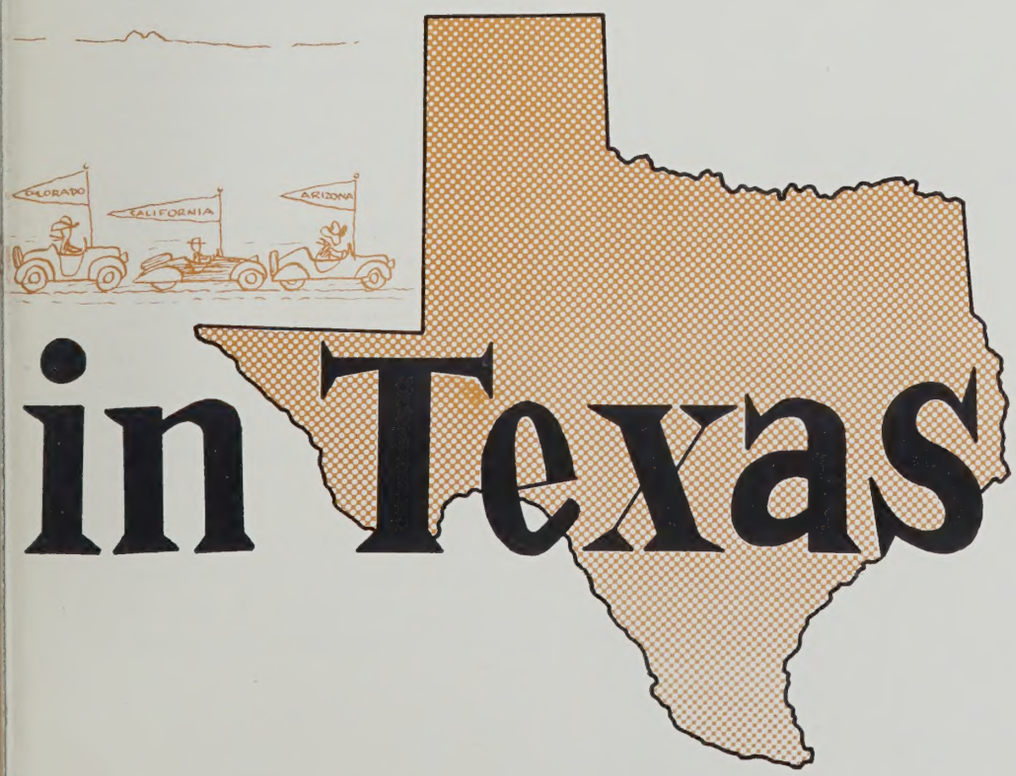
William E. Willey, Vice-president, WASHO, is State Highway Engineer of the Arizona Highway Department.



H. B. Glaisyer, Secretary-Treasurer of WASHO, is Secretary of the Oregon State Highway Commission.

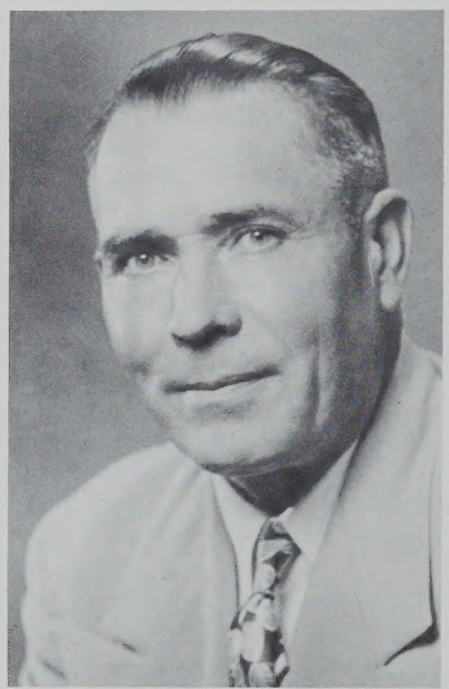
with the Texan include the following: Vice-President, William E. Willey, Arizona State Highway Engineer; and Secretary-Treasurer, H. B. Glaisyer, Secretary of the Oregon State Highway Commission.

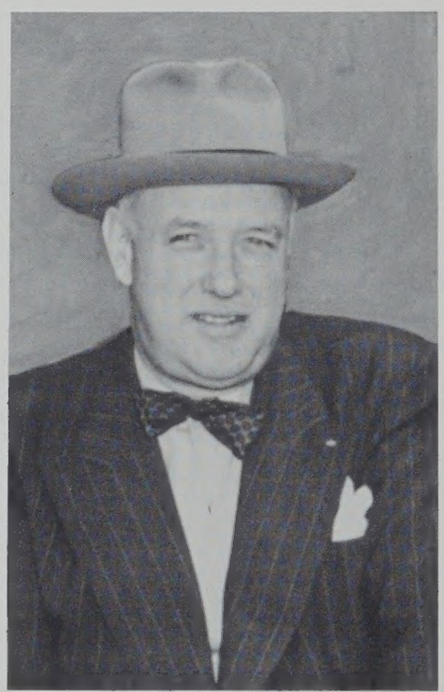
Members of the 1957 Executive Committee are J. R. Bromley, Superintendent and Chief Engineer of the Wyoming Highway Department; T. J. Heimann, Chairman of the New Mexico State Highway Commission; Houston D. Mills, State Highway Engineer of Nevada; W. C. Williams, Deputy State Highway Engineer of Oregon; and C. Taylor Burton, Chairman, Utah State Road Commission.



Social functions will include an informal Texas Night Party on Tuesday, June 11, beginning at 6 p.m., with Texas as host. The following evening an informal family dinner with special entertainment is scheduled. A luncheon and style show for ladies and men Thursday noon will precede the final assembly and official adjournment.

Wednesday, June 12, while a general assembly of speeches is under way for delegates, special "Ladies' Day" activities will entertain wives. A coffee at the River Oaks Country Club at 9:45 will be followed by a tour of the select residential section of Houston. Social lounge headquarters for the ladies will be maintained in a "Hospitality Room" at the Shamrock Hilton throughout the convention.





Members of the 1957 WASHO Executive Committee include (left to right): J. R. Bromley, Superintendent and Chief Engineer of the Wyoming Highway Department; T. J. Heimann, Chairman of the New Mexico State Highway Commission; Houston D. Mills, State Highway Engineer of Nevada; W. C. Williams, Deputy State Highway Engineer of Oregon; and J. J. Marsh, Member, Colorado Highway Commission.

Friday, June 14, the Texans, as host delegation, will show their visitors the site considered sacred to all natives of the Lone Star State — San Jacinto Battlefield, which will be one of the points of interest on a "See Texas" Tour that day. WASHO visitors will be taken sight-seeing by bus and boat through the Houston-Galveston area. Buses will be boarded at the Shamrock Hilton Hotel at 9:30 a.m. The party will be transported to the docks where boats will be boarded for the trip down the Houston Ship Channel to Baytown. Back to the San Jacinto Battleground by boat, passengers will disembark to see the San Jacinto Monument, largest stone monument in the world, and the actual battlegrounds where the decisive battle for Texas' independence from Mexico was won. There they may also view the Battleship Texas. The bus will then proceed to Galveston by way of Texas City. The afternoon will be spent in Galveston, either sight-seeing, fishing or swimming. After dinner on Galveston Island, the buses will return to the Shamrock Hilton via the Gulf Freeway, putting the finishing touch of fellowship to the 1957 WASHO Convention.

Clay-Lime Stabilization

The ever-increasing wheel loads and the attendant increase in depth of pavement and its support has brought up a problem in this district requiring a different solution from the usual procedure of increasing the flexible base thickness.

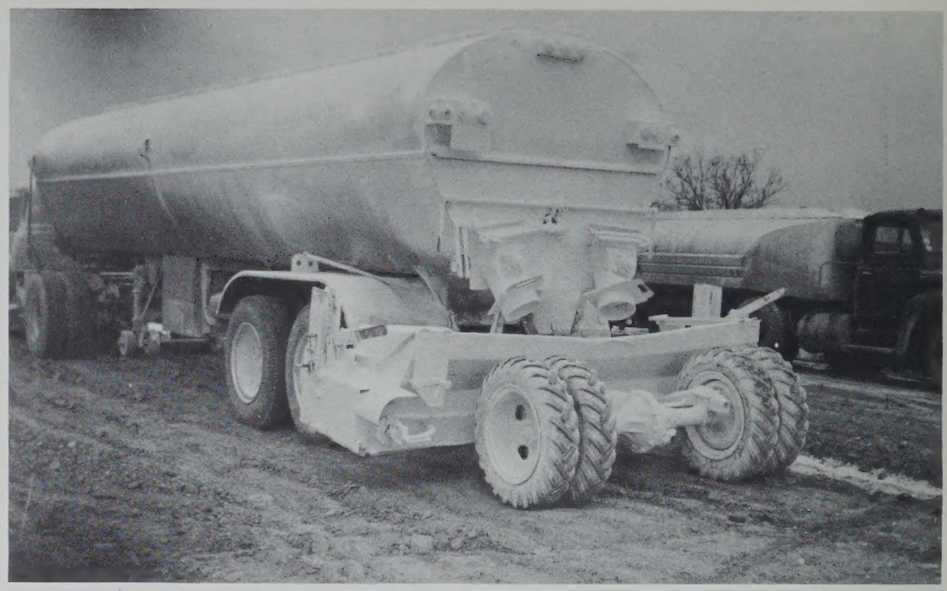
In the design stage of the project for flexible base and pavement for U. S. Highway 81 south of Belton, the depth requirements for the design wheel load made for very steep side slopes unless trenching of the base material was resorted to. On the sections with weakest subgrade materials, a depth of 24 inches of base and pavement was not adequate for the proposed wheel loads. To increase the depth of base to gain the additional strength would steepen the already awkward side slopes. After conferences with the Road Design Division and the Materials and Tests Division, lime stabilization of the top six inches of the subgrade was undertaken.

The underlying geologic formations are in the Eagle Ford, Washita, and Fredericksburg groups. The limestones in these groups are generally a stable material ranging from Class 1 to 3 for the Edwards limestone; to Class 2½ to 4 for the others. Of the soils found on the surface the Del Rio clay outcrop, a triaxial class 6.4, was found to be the most unstable, with the other soils ranging down to Class 4.0.

Under the direction of Jim Kelly, District Laboratory Engineer, samples were taken and tests were made using various percentages of hydrated

Lime-spreading operations.

lime admix. Table I shows the soil constants before and after the addition of 6 per cent of lime to five samples chosen as representative of the soils to be utilized in the subgrade. Figure II shows the strength classification curves plotted from triaxial tests made before and after the addition of 6 per cent lime to the five clay samples. The factor of 6 per cent was chosen for the weaker soils because the improvement brought about by this quantity seemed adequate, and using more than 6 per cent made the process less attractive economically. The soils having a triaxial class of about 5.3 and up are being stabilized with 6 per cent lime. The soils with a triaxial class of about 4.7 to 5.3 are being stabilized with 4½ per cent lime. The remainder of the soils to be stabilized are having 3 per cent lime added.



Eight-inch augers in the tank of the bulk lime delivery truck feed the lime to the discharge gates over the spreader box, which is coupled to the truck.

From Table I, it can be seen that a remarkable change in the soil constants has taken place after the addition of the lime. By virtue of a large change in the Liquid Limit, the PI of the treated material drops down into the flexible base range and the shrinkage ratios drop to very low values. Also from Figure II, the strength characteristics are seen to go up to the Class 1 bracket in some cases. These abnormal changes in the soil constants are somewhat misleading. Their only real significance is to indicate that certain chemical changes have taken place and the subgrade now has the desired strength. This strength is real and not misleading if it is kept in mind that this crust of treated subgrade must be protected from overstress by too much heavy traffic. On this project, the only heavy traffic on the subgrade will be haul trucks dumping the foundation course. Since the lime-treated material is laid in with heavy rollers, there is little danger of any damage from the haul trucks. After the foundation course is spread there is, of course, no danger at all of damage to the treated subgrade.

The specification for the lime-treated subgrade on this project specifies a general method of applying the lime and mixing it with the subgrade material, but allows the contractor to devise a different method if he desires, providing it is acceptable to the engineer.

Contractor on this project is W. O. Pelphrey and Pelphrey-Farquhar Inc. Under the supervision of Clarence J. Janak, Resident Engineer in charge of construction, the contractor — after some experimenting — has adopted the following construction

TABLE I

SAMPLE NO.	TYPE	MATERIAL	CLASS	LL	PI	LS	SR
95	Del Rio Clay	Before Stab.	6.4	79	50	23	1.86
1941-14	" " "	After Stab.		61.8	27.5	13.1	1.52
94	Darnac Clay	Before Stab.	5.5	69.5	35	20.9	1.88
1942-14	" "	After Stab.		40.8	9.2	5.2	1.44
2241	Crawford Clay	Before Stab.	5.1	56.4	25	17.7	1.86
1943-14	" "	After Stab.		43.1	10.4	5.7	1.41
2242	Abilene Clay	Before Stab.	5.3	67.1	34	19.8	1.88
1944-14	" "	After Stab.		49.9	14.8	7.8	1.38
2239	San Saba Clay	Before Stab.	5.4	64.7	30	20.5	1.92
1945-14	" " "	After Stab.		47	12.3	8.2	1.46

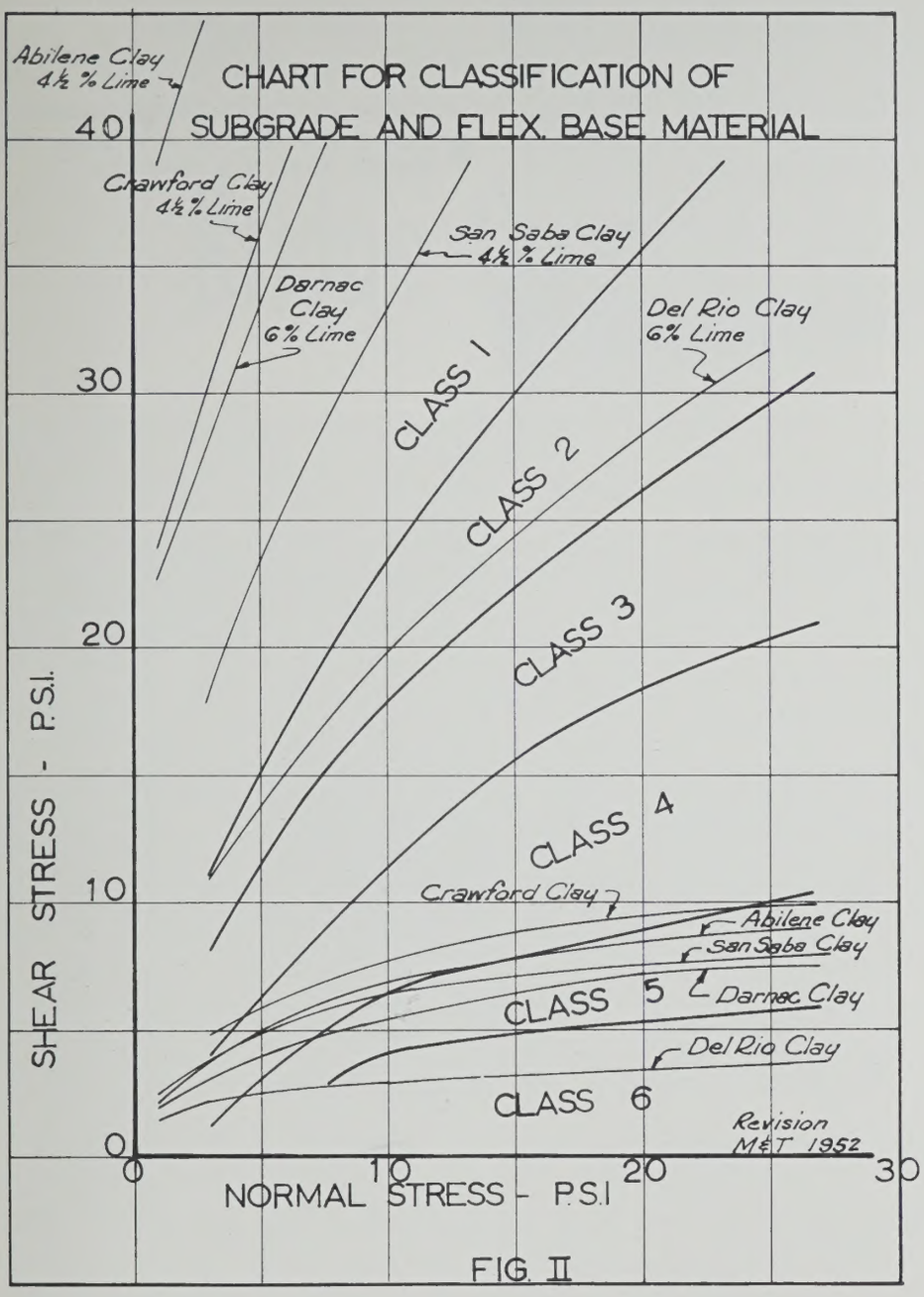
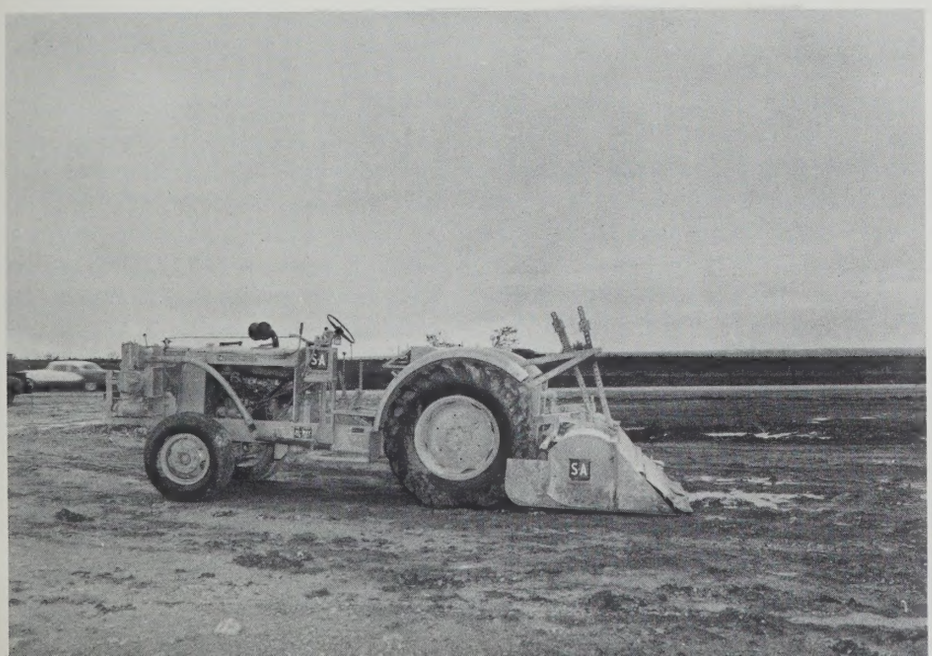


FIG. II

procedure. The stabilizing operation is confined to the 42 feet of subgrade beneath the pavement and shoulders. After removal of weeds and other debris, the subgrade is brought to line and grade by blading and rolling. Blue top stakes preserved from the previous grading job were used on this project. Using a disc plow, the contractor makes a pass over the area to be stabilized, cutting three inches deep. This three inches of material is bladed to each side, making two approximately equal windrows. Another pass is then made with the disc plow, cutting three inches additional depth. This, along with that in the two windrows, is the material to be stabilized.

Using a regular V-shaped lime transport truck coupled to a cement spreader box, the lime is spread for the full depth over the 42 feet of width. Length of lands varies from one to three thousand feet, depending on immediate conditions. The lime is then sprinkled and the windrows of material are bladed across to cover the lime. A pulverizing traveling mixer (Seaman-Andwall) is used to make one pass over the area. The area is thoroughly covered by a sprinkler and the mixture of material is allowed to stand for one to three days. During this period of time, the lime and water act to break up the large lumps of earth and make the material easy to handle. To insure this action of the lime, the mixture is kept moist by sprinkling during this one-to-three-day period.

The traveling mixer is again used to make several passes over the material to complete the mixing process. The material is then bladed into windrows and aerated or sprinkled as necessary to bring it to optimum moisture. Using thin lifts, the material is laid in with sprinkling and pneumatic rolling. At the midpoint and on top, the land is thoroughly rolled with the 50-ton pneumatic roller to get the optimum compaction.



Traveling mixer used to mix the lime into the soil.

A portion of the lime is in place; the spreader truck is in the distance.

Finished stabilized subgrade.

TABLE III

Cost of Lime Stabilization per Square Yard

Item	6% Lime	4½% Lime	3% Lime
Lime	$0.27	$0.18	$0.14
Water & Rolling	0.03	0.03	0.03
Mixing	0.05	0.05	0.05
TOTAL COST:	$0.35	$0.26	$0.22

The subgrade is finished again to blue tops and kept moist by sprinkling for seven days. No heavy loads are allowed on the subgrade during this curing period.

The costs involved in this lime stabilization are shown in Table III. This is the first lime-stabilization project in this district, and it may be expected that prices will have an erratic trend until more of the work has been done and contractors become more familiar with the operation. On a more recent project in McLennan County, it is estimated that from contract prices the cost of stabilizing six inches of subgrade will be approximately 41 cents per square yard.

The short period of time this work has been under construction has not permitted us to make any extensive evaluation of the work. All that has been observed, however, confirms the results obtained in the Materials and Tests Laboratory and in other districts where clay has been stabilized with lime.

Over The Pecos

Bridge Opening, Texas Style

James B. Fincher, Assistant Expressway Engineer
and
Joe T. Brown, Senior Resident Engineer

This clean stretch of steel across the Pecos Canyon marks the efforts of many men.

A real West Texas celebration was held April 27 when the new Pecos River high bridge was dedicated and officially opened to U. S. 90 traffic. More than 1,500 spectators were on hand for the victory over the forbidding Pecos Chasm. After the ribbon-cutting by E. H. Thornton Jr., traffic began to roll across the 1,310-foot-long structure, culminating two years and ten months of bridge-building effort and representing $1,269,268 in highway dollars.

Speeches for the occasion were supplied by Senator Dorsey B. Hardeman of San Angelo, Highway Commissioner H. C. Petry Jr., and other officials. The Old Spanish Trail Association handled the plans for the

Former Commission Chairman E. H. Thornton Jr., Commissioner Herbert C. Petry Jr., and State Highway Engineer D. C. Greer were on hand to see the West Texas celebration.

E. H. Thornton Jr. cuts the ribbon and opens the bridge for traffic.

dedication, and barbecue was provided by the Del Rio Queen City Lions Club. Speeches and barbecue were given out at the new triple-arbor roadside park unit which is about three-quarters of a mile from the eastern entrance to the high span.

With bands playing and Texas beauties gracing the ceremony, TV cameras grinding and a serial star on hand, the doings along the Pecos River were very different from a Pecos outing and eating expedition held in 1849. Texas Ranger commander Colonel Jack Hays had been directed to find a southern route across the Pecos River. His party of 35 Rangers and 35 citizens became hopelessly lost in the Pecos River Canyon and were forced, when all supplies gave out, to eat their mules. When Hays and group were finally rescued by a band of Mescalero Indians, Hays conceded defeat to the formidable cliffs of the Pecos, and told his superiors:

"This expedition was a flop . . . I'm resigning."

A river crossing was later found, but the route was tedious and difficult. The sheer walls of the Pecos gorge resisted all challengers for many years, until 1892, when the Southern Pacific railroad bridge stretched successfully the 2,180 feet across the canyon.

With progress in motor travel, demands for a highway bridge increased, and in June, 1923, the old canyon-bottom river crossing was replaced, at a cost of $79,819, by the original Pecos River highway span. Erected some 50 feet above the water level, and far above any recorded flood crests, this first bridge consisted of two steel truss spans, each 225 feet in length. Spans rested on concrete abutments and one central pier. The bridge was in service until June, 1954, when a twenty-inch rain on the Pecos watershed sent an 86-foot wall of water roaring down the canyon. The wild waters of the flood tore the bridge from its canyon sockets during the night of June 26.

The new bridge, Texas' highest, carries traffic 273 feet above the normal water line. The new location of the bridge shortens the old highway link across the Pecos by 1.7 miles.

As television actor, Edgar Buchanan, who plays the role of Judge Roy Bean in the "Law West of the Pecos" series, pertinently remarked about the bridge at the dedication . . . "the main thing is, it sure makes it a lot easier to get across this dang canyon!"

A short drive from the Pecos River Bridge and U. S. Highway 90 brings the traveler to the new Pecos River roadside park. The wide two-lane park road, landscaped with yucca, ocotillo, and other desert plants, leads

Visitors are directed to the roadside park by this 7 x 10-foot sign which depicts the view of the bridge from the park.

Eatin' time! Hungry spectators gather at the roadside park for a western barbecue.

The band from Sanderson High School steps out across the canyon span. Music was also supplied by the Sul Ross College band.

The Pecos Canyon Roadside Park is three-quarters of a mile from the Pecos River Bridge. A rock wall and a chain link fence keep the canyon viewer from being too adventurous.

Resident Engineer G. P. Brown, Sr., was in charge of construction of the bridge. Workers on the bridge set a safety record with no lost time accidents. Here Brown receives a plaque from Dudley Baker of the Old Spanish Trail Association. Chief Inspector Grover L. Sprott also received a plaque.

With the Pecos Bridge in the background, Commissioner Herbert C. Petry Jr., State Maintenance Engineer J. A. Waller, Resident Engineer G. P. Brown, Sr., of District 22, and District Engineer Chester N. Parsons, pose happily in the park area.

Here's the bridge! All 273 feet of it stretching up from the canyon bottom.

These men designed the bridge. Left to right are Senior Designing Engineers Wayne Henneberger, Farland C. Bundy, Robert L. Reed, and Supervising Designing Engineer, E. A. Jelinek.

to the modernistic picnic and observation area. Parking space for fifteen cars is adjacent to the building.

The fifteen and nine-tenths-acre parksite was donated by Fate Bell of Del Rio, and a bronze plaque was placed at the entrance of the building in memory of his stepmother, Mrs. Pattie Bell.

Designed by Harold Bowen of the Maintenance Operations Division, the park building is made of ledge stone obtained a few miles east of the river. Pinkish shades in the rock compliment the colors of the canyon walls.

The central area of the building is designed to give tourists the maximum in canyon viewing. To the right of the observer is the magnificent view of the bridge. Downstream, the joining of the Pecos and Rio Grande Rivers can be seen.

At each side of the observation area there is a picnic unit with table, benches, and incinerator. For the convenience of thirsty picknickers, bottle openers have been installed on each table. Roofing for the triple arbor building is corrugated asbestos. Construction on the park project began in October, 1956, and was handled by Lester Sanders, Maintenance Engineer of District 22. Completed the latter part of April, the parksite has already withstood an initial tourist onslaught of 1,500 the day of the dedication.

The picnic arbor land slopes toward the river. Tourists desiring a more thrilling view of the canyon can walk down a few steps, cross a 30-foot patio area, and look over a three-foot rock retaining wall. As a further protective measure, there is a six-foot ledge and then a stout seven-foot chain link fence. Since the land slopes, the fence does not impede the view of the canyon from the three-foot retaining wall. Fencing is on the cliff side of the entire park area.

HAZARDS

in highway making

Mosquitoes and spiders — plague take them — can leave a man itching with sores and feverish with infection; poison ivy can level him to the bed swollen and miserable for days; and the bite of a moccasin, a rattler, or copperhead is an experience which can finish him off completely — or put him on a hospital critical list. No joke are these natural items of the field which wait with their own peculiar weapons to do battle against the men who build highways.

Last year poisonous plants, and insect and snake bites were among leading causes of accidents with workers of the Texas Highway Department. In fact, 105 people on the Department payroll can take a wry look backward and remember such uncomfortable on-the-job encounters with Nature in 1956.

A computation of last year's accident total, from all causes, was recently completed by the Insurance Division of the Department. The poison ladled out by bugs, vines, and varmints, however, was only part of the picture to be reconstructed from the charts and statistical tables. Plain, ordinary lapses of plain, ordinary caution in person-to-person, person-to-machine and person-to-pick-and-shovel encounters resulted in far and away the most accidents.

The greatest amount of punishment in the 1956 accidents was taken by workers' eyes. Fingers ran a close second, and body and back muscles came in third. Although the wind is the culprit whose caprices make many injuries to the eyes unavoidable, workers themselves are the control agent for arc burns when welding on bridges or in shops, for hurts from the particles which fly when

The National Safety Council saluted the Texas Highway Department for its safety record in 1953 and 1954 with Award of Honor plaques, and in 1955 with an Award of Merit. Robert E. Lindsey, Director, Insurance Division, keeps in his office this evidence of Texas' favorable comparison safetywise with other highway departments in the nation.

tools are held for grinding. Fingers get their abuse mainly from loading and unloading operations; for instance, when lumber or broken concrete from old sections of pavement is hoisted onto trucks by hand. As a matter of fact, the 1956 report by the Insurance Division emphasized that most accidents occur during the handling of materials.

At first glance the figures of Highway Department mishaps last year seem to set a new high. The total was 1,170. However, these accidents are classified as to whether or not the worker affected had to stay off the job as a result of his painful experience. The number of so-called "lost-time accidents" (256) was lower than in any other year during the past decade, except for 1954, when there were only ten less.

Fatalities totaled eight. This number, though higher than that of the three preceding years, matched that of the years 1950-52.

FIVE LEADING ACCIDENT CAUSES IN 1956

Road use of hand tools	184
Loading and unloading material	151
Truck and auto accidents	129
Poisonous plants, insect bites, snake bites	105
Brush, trees	61

First-aid knowledge may play a major role in keeping more accidents from developing into lost-time cases. Though the Insurance Division's report pointed out that records are not complete on the number of first-aid instances which occurred during the year, it was known that current first-aid cards are held by nearly 80 per cent of the Highway Department personnel, and 350 first-aid courses were given during the past year. The Insurance Division, through the districts, conducts a continual indoctrination and safety education program. It does this in several ways. One is by the printed material the Division prepares especially and sends out to jog interest in safety. Another is by its field representatives dispatched to counsel with and aid the district personnel with regard to local safety programs.

During the year a notable example of the value of first-aid knowledge was set by two Highway Department semi-skilled laborers in Pharr. Hubert and Milton Bonham, twin brothers, applied a tourniquet to the injured foot of a neighbor who had accidentally shot his foot, severing the main artery. The Bonhams, both first-aid instructors, saved the injured man's life, though the foot had to be amputated. The American Red Cross in Washington, D. C. awarded the pair its Certificate of Merit awards after considering statements from eyewitnesses and doctors on the merit of their life-saving action. (See story, February TEXAS HIGHWAYS.)

It is interesting that no particular place on the Texas map may be singled out as a geographic influence predisposing workers to accidents. During the past ten years first one, then another locale has landed either on top of the heap with the fewest accidents or at the foot of the list with the most. In 1956 District 24 had the lowest total number of accidents, with sixteen. Only three lost-time accidents were tabbed against District 25, thus placing it in honor place for fewest in that category.

A bright reminder of past laurels which have come to the Highway Department is contained in the Insurance Division's recent report. The Award of Honor from the National Safety Council has come twice — in 1953 and 1954 — and the Council's Award of Merit given the Highway Department in 1955 places it in favorable comparison with other state highway departments. Only Washington State has been similarly acclaimed. In 1954 that northwestern state was given an Award of Honor.

In terms of dollars and cents, the smarting eyes, banged-up fingers and sprained backs, the sores and rashes, the poisonous bites all cost the Highway Department more than the annual payroll amounts to in any one of a dozen Texas counties we could name. Money cost: $182,194.67, with the hidden cost estimated to equal four or five times that amount.

And days gone! It would take over 174 years to replace the work days which vanished last year. Projected back into history, those 63,721 days (lost due to all accidents) would situate us again in the drum and fife days when George Washington and his men had just won the American Revolution, and white men weren't paying too much attention to a big spread of land with a scattering of Spanish Missions on it down near a river called the Rio Grande.

ACCIDENTS DURING 1956

	Total Accidents	Lost Time Accidents	Fatalities
District 1	74	25	
District 2	80	10	
District 3	27	6	
District 4	30	5	
District 5	34	7	
District 6	37	14	
District 7	42	13	
District 8	41	4	
District 9	64	17	2
District 10	44	9	
District 11	28	13	
District 12	116	25	1
District 13	35	9	
District 14	41	8	
District 15	53	10	1
District 16	39	5	1
District 17	33	8	
District 18	91	31	
District 19	47	7	
District 20	52	5	
District 21	32	5	1
District 22	29	7	1
District 23	26	6	
District 24	16	4	
District 25	20	3	1

Land Values along the Freeway

The Gulf Freeway, for its entire length from downtown Houston to Galveston, will soon be five years old. It has been ten years since construction of the first section was started. Yet the influence of this facility on the value of the land it serves is still being felt.

The recently-published report on "A 15-Year Study of Land Values and Land Use Along the Gulf Freeway in the City of Houston" shows that the construction of the Freeway had a definite and distinct effect on the value of properties in the areas through which it passes. An extension of the ten-year study made in 1951, this second study has helped

Multimillion-dollar Gulfgate Shopping Center (right center) now stands where only vacant tracts of land existed before freeway construction.

An abundance of parking space and easy access are two features that attract commercial establishments to freeway sites.

to establish trends only indicated in the original report. It covers the same areas as the first study, utilizes all the data assembled for the original report, and correlates results with findings of the 1951 study so that the extension actually covers a fifteen-year period.

Properties adjacent to and near the Freeway have jumped radically in value since it was built, the report shows. The value of properties in areas immediately adjacent to the Freeway was favorably affected for ten years after the beginning of the facility, and in areas a few blocks away property values were favorably affected for five years. The use and value of land have been affected by their position relative to the Freeway, and the effect has varied with the type of land use before construction and with proximity to the Freeway.

First to feel the effects were the properties immediately adjacent, then a few years later the areas several blocks away began to feel the influence of the Freeway. Some properties were affected by the mere knowledge of the route the Freeway would take before construction was even started. Construction began early in 1946 and the first section, about three miles long, from the center of the city outward, was placed in operation on October 1, 1948. At the time of the first study about six and one-half miles were open, and the completed Freeway was opened

This automobile agency bought several residences, demolished them, and built this new showroom on the frontage road during construction of the Gulf Freeway.

all the way to Galveston on August 2, 1952.

Influence of the Freeway on large, undeveloped tracts was very apparent as soon as the route was definitely established. Such properties, both in the area immediately adjacent to the route and in the area a few blocks away, showed a tremendous increase that apparently reached its peak about the time the Freeway was completed. The influence on these land values apparently lasted until the more desirable tracts had been taken. These areas made large gains in values from 1940 to 1945, then were fairly steady from 1945 to 1950 and from 1950 to 1955.

Only in these sections made up of vacant tracts have changes in land use been rapid. Otherwise, changes in use have occurred much more slowly than changes in land values. Vacant land along the Freeway has been developed by light industries, shopping centers, new residential subdivisions, and multiunit apartment houses. Tracts that are still vacant have either been bought for development or are available at prices far exceeding their value before the Freeway was built and much higher than the present value of vacant land in other parts of the city.

Soon after the beginning of construction, the influence of the Freeway was felt on blighted residential and light industrial areas — a very favorable influence on property values in areas of low-cost, run-down houses, particularly on property fronting on the frontage roads. These adjacent properties increased in value four times faster than like property a few blocks away during the five years following beginning of construction, and twice as fast in the next five years. Similar property in other parts of the city has had practically no change in value or use.

A definitely noticeable change in land use is evident along the section of the Freeway through these blighted industrial areas. The change has been from residential to commercial, especially along the frontage roads. Run-down houses have been replaced by small businesses, light industries, local offices for national concerns, and multiunit apartment buildings.

A few blocks southeast of the central business district the six lanes of the Gulf Freeway and the frontage roads change into four one-way streets in what is known as the "Four-street System." Downtown commercial properties along this four-street system increased in value several times faster than similar property elsewhere, and more large concerns have been established in this area since 1945 than in any similar area in the city. Commercial properties a few blocks away have also been favorably affected although on a smaller scale.

Park Place provided an opportunity for the study of the Freeway's effect on an integrated suburban center. It was a separate, incorporated community until 1927 and has been a town unto itself for many years with its own business center, schools, and churches. The additional right of way required for the Freeway almost obliterated the little business center of the town, forced the removal of one church, and encroached upon the grounds of a church school.

The effect on this community was felt immediately after the route was established, especially on properties along the proposed route, and this favorable influence extended to properties farther removed a few years later. At the time the Freeway was built through Park Place, the value of land went up very rapidly — twice as fast as comparable property elsewhere — as the displaced store owners re-established as near the facility and their previous sites as possible. Many new concerns moved in. When the more desirable sites had been taken, the activity slowed down and property values decreased slightly. Then, a few blocks farther from the Freeway there was an increase in activity and in land values as new concerns started getting established on some of the thoroughfares leading to the Freeway.

Blighted residential sections along the freeway have been replaced by commercial establishments and apartment buildings. The value of such property increased considerably.

Business sections such as this no longer exist along the freeway. They have been replaced by light industries, large shopping centers, and other businesses.

Only in restricted residential areas along the Freeway has the facility had little lasting effect on property values. These areas have remained unchanged in land use and property values have increased proportionately with similar property in other parts of the city.

This Freeway study, as related to changes in land values, is based upon actual sales of real property. A total of 2,687 bona fide sales of property — all the sales on record in the selected areas in the study period — were analyzed. The Gulf Freeway presented a unique subject for a study of this type. Houston's population increase has not been sudden, and its expansion has been fairly uniform, influenced largely by the extension of traffic arteries in all directions. Thus it appears logical that changes in land values and use would be proportionately similar in like areas in all sections of the city. This condition or trend would probably continue unless some unusual influence was exerted upon a particular section, and the Gulf Freeway is the only complete traffic artery of its class in the city.

The groups of areas used in the studies were carefully selected before the collection of any data. Study periods were selected to obtain a comparison before and after the Freeway became a factor of influence on property values and land use. The original study, conducted jointly by the Highway Department and the Bureau of Public Roads and directed by the Department's Highway Planning Survey, covered the periods before the facility was started, 1939-41; after the route became known and work was started, 1945-46; and the latest available factual data, 1950-1951.

In October, 1955, Norris & Elder, Consulting Engineers of Houston, were retained to extend the study. By the time of this last period the Freeway had become an accepted fact, no longer a novelty, but still a great factor of influence upon property value and land use.

texas expressways

SAFEST IN THE LAND

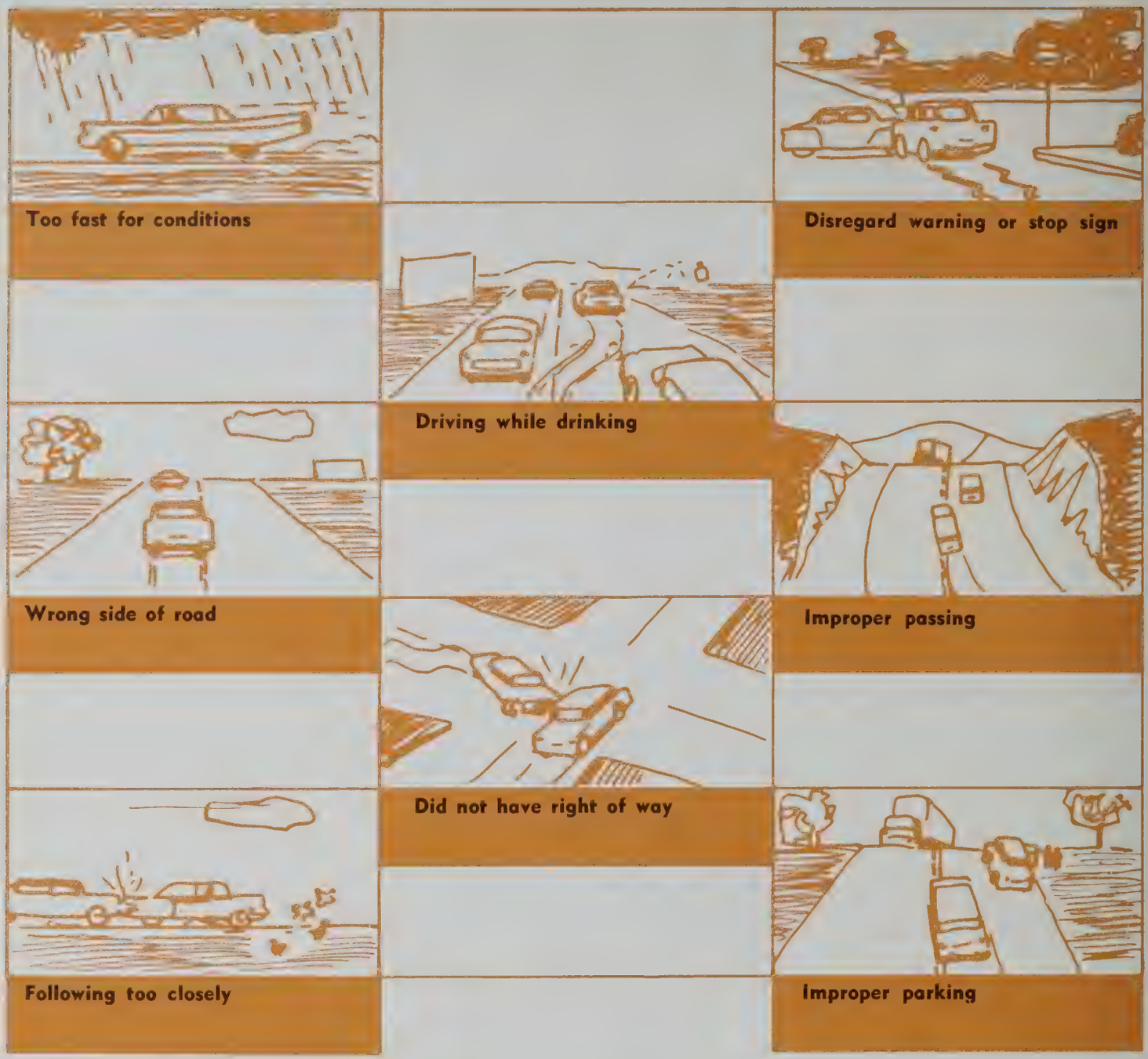
Last year the fatality ratio on the pure expressways in Texas was only 2.14. Reports from the seven districts in which are located the 77.4 urban miles of expressways with full controlled access, grade separations, and other freeway facilities revealed that there was a total of fifteen fatalities which occurred as a result of vehicle accidents. The national average, based on 100 million vehicle miles traveled, is 2.8—which places Texas below the national average. The state-wide average last year on all types of highways was 6.5, which means that our pure express highways are three times as safe as a conventional highway.

The national ratio for conventional highways is 8.0. There was a total of 2,611 traffic fatalities in 1955 which represented an economic loss of $229 million. The total vehicle miles driven in 1956 was 40,087,747,-508, a 1.22 per cent increase over

EXPRESSWAYS
March, 1957

CITY	MILES COMPLETED	UNDER CONSTRUCTION	TOTAL ESTIMATED COST
Amarillo	None	1.1	$ 1,679,444
Austin	13.7	None	8,377,120
Houston	22.6	3.4	37,768,343
Dallas	17.1	2.1	20,072,194
San Antonio	8.3	23.4	28,693,346
Fort Worth	10.8	4.2	19,429,242
Beaumont	1.5	2.6	7,626,198
El Paso	2.6	None	2,469,446
Waco	0.2	1.7	2,023,361
TOTAL	77.4*	38.5*	$128,138,694

*Frontage roads, grade separations, and other full express facilities.



CAUSATIVE FACTORS IN RURAL FATAL ACCIDENTS

the previous year. The fatal accidents increased by 2.5 per cent over this same period of time. There were 228,832 vehicle accidents of which 2,147 were fatal. September was the peak month with 259 fatal accidents, and May had the fewest, 159.

Most rural fatal accidents (358, or 22 per cent of the total) occurred on Saturday, while Thursday seemed to be the safest day for driving. More people were killed on rural roads between the hours from 5 to 7 p.m., while fewer fatal accidents occurred between the hours from 4 to 6 a.m.

The most dangerous drivers are males in their twenties and then they seem to become better drivers as the years go by. Statistics indicate, however, that age has little bearing in the number of female drivers becoming involved in fatal accidents. The data collected shows that the percentage of fatal vehicle accidents in which the driver is a female remains somewhat constant between the ages of 15 through the early 60's.

Texas' Highway Commission

Marshall Formby, a Highway Commission member since 1953, was named chairman of the State Highway Commission May 14 to succeed E. H. Thornton Jr. A West Texas attorney-businessman, Formby was appointed Chairman when Brady Gentry, previously named, reported that personal affairs prevented him from accepting the position. New on the Commission is Charles F. Hawn of Athens, appointed for a six-year term as a Commission member.

The new Commission Chairman is 45 years of age, a Baptist, and a Shriner. He was County Judge of Dickens County from 1937 to 1940 and State Senator from the old District 30 in the Lubbock area from 1940 to 1945. Formby is past president of the West Texas County Judges' and Commissioners' Association. During World War II he served four years with the Corps of Engineers. Born near Como in Hopkins County, the new Chairman attended public schools at McAdoo and Spur in Dickens County. He holds the degree of bachelor of arts from Texas Technological College and the degree of master of journalism from The University of Texas. He attended Baylor University School of Law. His business career has included the publication of newspapers. Formby is owner of Radio Station KPAN, Hereford, and has an interest in KFLD at Floydada.

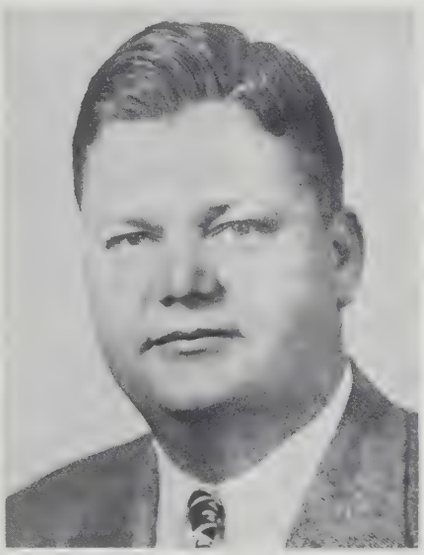
Hawn, a native of Athens, is vice-president and general manager of Hawn Lumber Company, Inc., Athens, and is engaged in construction and development of residential areas in Dallas and Shreveport, Louisiana. The new Commissioner is also a member of the board of Olive-Myers-Spalti Manufacturing Company, a furniture manufacturing concern with head office at Athens and a branch in Houston. Formerly president of the East Texas Chamber of Commerce, Hawn is a Rotarian. He is a former member of the Executive Committee of the Texas Good Roads Association.

The new Commissioner is a graduate of Athens High School. He attended The University of Texas, where he majored in business administration and was a football letterman in 1929 and 1931 and basketball letterman in 1928. He was a member of Sigma Chi fraternity at the University. During World War II Hawn was a lieutenant-commander in the United States Navy.

A member of the First Methodist Church of Athens, Hawn is past president of its Board of Stewards and now serves as a Trustee. He is also a member of the Board of Directors of the Methodist Home in Waco.

Third member of the Commission is Herbert C. Petry Jr., from Carrizo Springs, who was appointed in 1955. A practicing attorney, Petry holds the bachelor of laws degree from The University of Texas. A former director of the Texas Good Roads Association, he has served on the Governor's traffic safety and economy commissions. He is active in the Methodist Church, the Dimmit County Bar Association, the Boy Scouts of America, and the South Texas Chamber of Commerce. He is past president of Lions International.

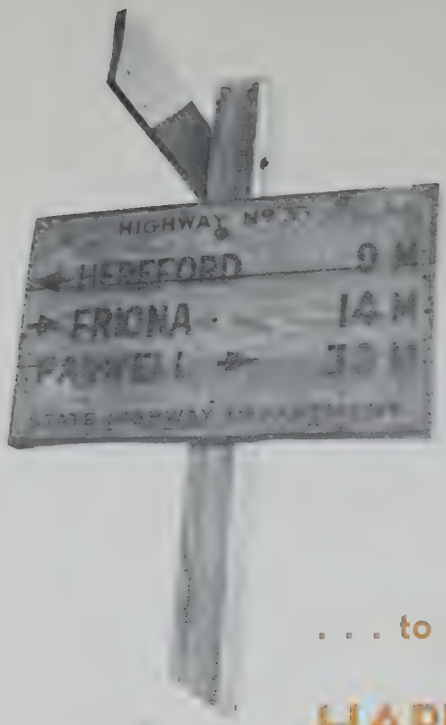
Chairman Marshall Formby



Herbert C. Petry Jr.

C. F. Hawn

Forty years ago in April the policy-making body known as the Texas Highway Commission was set up by the Legislature, and forty years ago in June the State Highway Department began operations. In this issue commemorating the fortieth year of the Texas Highway Department's existence, TEXAS HIGHWAYS salutes the newest Commission.



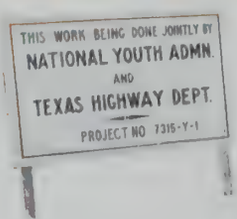
. . . to our 13,000 employees

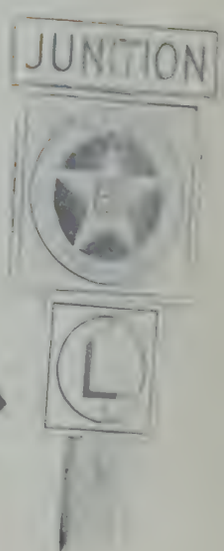
HAPPY ANNIVERSARY

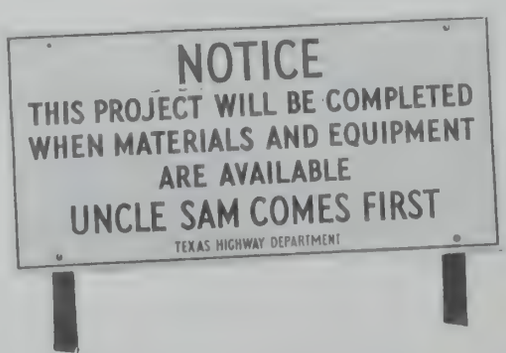
The forty-year history of the Texas Highway Department can be described in two words--conflict and cooperation.

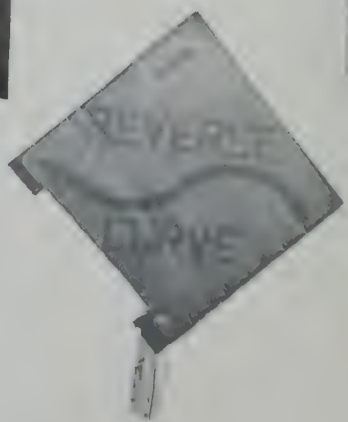
From the impassable trails of 1917 to the express highways of 1957 the route has been rough and rocky all the way. The propelling force has been the determination and cooperative attitude the people of Texas have always maintained toward good roads. The greatest milestones erected along the way were erected by individuals of the Department whose vision, ability, and sagacious leadership plotted the course and paved the way.

To the past and present employees of the Texas Highway Department this special anniversary story is dedicated . . . .









40 YEARS IN REVIEW

Information and Statistics Division

One morning in June . . . in the year 1917, there began quietly, and without much fanfare, the Twentieth Century saga of Texas Highway Department development.

This history of development belongs to Texas, to Texans, and those first highway engineers and administrators, who were not even certain as to their duties and responsibilities but knew they had a tremendous job ahead. Their vision and determination offset their problems, and they wrote their history well, to be read by later generations across plains, through swamps, and over rivers, bays, creeks, and mountains.

Their story does not have the hero-like quality of the pioneers who lived, fought, and won the Republic of Texas. Rather, it is a story of dedicated men *intent* and determined that statistics, slide rules, pick, shovel, sweat, and purpose should join the unending distances of Texas.

The first highways of Texas were trails made by explorers as early as 1540, when the Francisco de Coronado expedition marched across western Texas. In 1713, Captain Domingo Teran de los Rios, the first Provincial Governor of Texas, blazed what was later known as El Camino Real, or The Royal Highway, now known as the Old San Antonio Road. Not until 1715, when St. Denis led an expedition from San Juan Bautista (near Eagle Pass) through San Antonio to Nacogdoches and eastward, was there a definite route of travel established in Texas.

The frontiersmen entering Texas around 1800 found other trails of note. One of these trails led from the site of Orange, westward past Houston, and on to San Antonio. That is now incorporated into a U. S. Highway, called the Old Spanish Trail. Those bound south from Arkansas found a vague path known as Trammel's Trace. It began near Texarkana, went through East Texas, and ran southward to Nacogdoches.

Texas' gradual growth of roads followed the development of those and other old trails into a network of modern highways. Little progress was made from the era of the prairie schooner to the day of the horse and buggy; but with increase in population expansion was dependent on good, passable roads. Primitive Indian trails, rutted wagon tracks, and cattle trails were destined to become the smooth ribbons of concrete and asphalt we travel today.

Maps of that day often showed "roads" that were not even good cattle paths. Settlers followed these roads by compass, or by tree markings left by earlier travelers. Wagon travel was extremely difficult, and horses were used more than any other form of transportation.

As the need for surfaced roads grew, private companies built toll roads and bridges, because settlements and towns were too poor to initiate such systems. Some of the earliest roads were built of plank, but they decayed quickly and were dangerous to travel. Most roads were in miserable condition — dusty when dry and bottomless pits of mud when wet. Most of the private companies went bankrupt because there was not enough toll-paying traffic to support the roads.

Many major cities of Texas used wooden paving blocks; and it was said that mesquite was the best wood, as it could be worked green. According to one report, such blocks were hexagonal, five inches deep and four inches in diameter, with the tops slightly smaller than the bottoms. It

A Texas highway in 1917.

is possible they were sealed by pouring hot tar between the joints. Lengthy wet weather left these wooden blocks strewn everywhere as they swelled and buckled. Buried deep under modern-day paving, there are probably many of these blocks still swelling and buckling if sufficient moisture reaches them.

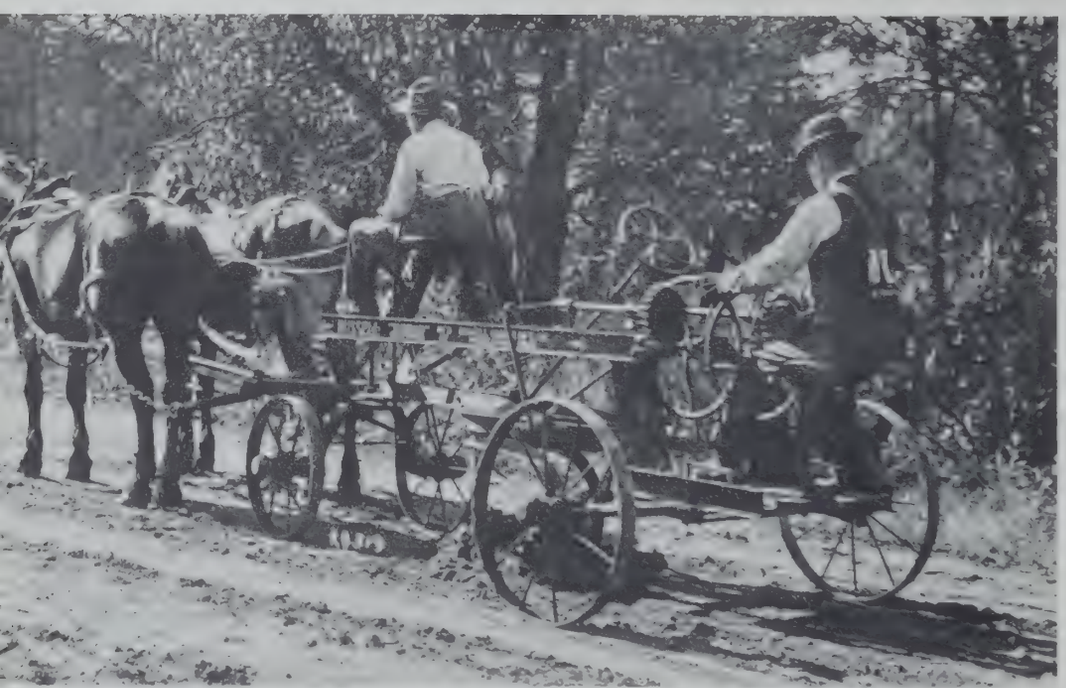
When Texas was freed and declared a Republic in 1836, attention centered on prospects of an all-weather system; but the roads built at that time were bypassed as settlements spread in all directions. It was not until many, many years later that a true, all-weather connecting system came into being. A system of taxation was put into operation whereby counties collected a fee of 25 cents on the $100 valuation. This system continued until 1883, when a constitutional amendment lowered the county tax for general purposes and allowed levy of 15 cents on the $100 valuation.

The dust and mud absorbed this tax, and in 1890 a second 15-cent amendment was passed.

During the "Gay Nineties" many Texas citizens owned bicycles, along

In 1917 this four mule grader with an elevated scraper was the ultimate in highway equipment.

The Fresno was another major step in the advancement of dirt-moving equipment. It is used here in a scene from Bastrop County on the Old San Antonio Road.



Early day road grader.

with the horses and buggies of that day. Cycling became a fad, and leagues in many cities started the first Good Roads Movement. Streets were in poor condition, country roads almost imaginary. An account in an 1896 San Antonio newspaper read: "The roads are now in such a poor condition and car tracks at the street crossings are so high that one physician has broken five singletrees of his carriage in the past few days."

Almost all roads were virtually impassable after bad weather, and farmers had a hard time getting their products to towns, or to the railroad for shipping. Badly hit by this situation, the railroads organized "Good Roads" campaigns.

One rail stockholder, Colonel E. H. R. Green, probably did not suspect he was carving an indelible niche in transportation history when he bought and drove the first "horseless carriage" in Texas in 1899. Green startled Terrell, Texas, by passing through the streets in his automobile, the first ever owned in the state. The whole town turned out to witness the sight; dogs barked, horses were frightened, and newspaper stories of the affair related that he created quite a sensation on the following trip to Dallas.

"DALLAS NEWS: October 6, 1899.

"Hon. E. H. Green . . . created a sensation in this city last night.

"At 7:30 o'clock he rode up and down Main Street in a horseless carriage at the rate of fifteen miles an hour. Nothing that has passed along the streets of Dallas since the parade of the Kalifs has attracted greater attention.

"Accompanied by a gentleman who is an expert in handling these vehicles, Mr. Green left Terrell in his new possession yesterday afternoon at 2:20 o'clock for Dallas, more than thirty miles away. Near Forney, they were crowded off the roadway into a gully by a farm wagon and the water tank was damaged so that it began to leak and a stop of an hour at a blacksmith shop was necessary in order to make repairs.

"Mr. Green arrived in Dallas at 7:30 o'clock, having made the trip in five hours and ten minutes. He related his experience last night as follows:

Where the twains meet. Horse power takes on a new meaning. This was the scene in the 1920's when a highway came through town.

A line-up of Model T's. They took over where the wagon left off.

Unloading a wagon by hand was never this quick.

The Model T used as dirt-moving equipment.

The drag scraper was one of the early day dirt movers. For a haul of 500 feet, each rig could move about ten cubic yards of earth daily.

The leaning wheel grader. This was the latest in grading efficiency in 1930.

Paving job, Highway 12, in Webb County in the early 20's.

" 'When we left Terrell we struck a very sandy stretch of road, and because of the dust thrown up by the vehicle we had to go very slowly. After this bad stretch was passed we turned on more power and fairly flew.

'It was amusing to notice the sensation our appearance caused along the road. Cotton pickers dropped their sacks and ran wildly to the fences to see the strange sight. And the interest was shared by the farm animals too. One razorback sow that caught sight of us is running yet I know. At least a dozen horses executed fancy waltz steps on their hind legs as we sped silently by, and but for the fact that we went so soon out of sight, there would have been several first-class runaways. When we reached Dallas, however, the city horses, used to electric cars and other things alarming to most equines, did not even lift their heads.

'I have no idea of the speed of the vehicle. We did not put on full power on the country roads because it would have been too dusty for comfort, and when we struck the asphalt pavement of Main Street, we dared not do so because the thoroughfare was so crowded that it would have been dangerous to human life. I enjoyed my trip immensely and intend to make many more like it in the near future.'

One of the earliest grade separations. Atascosa County, 1921.

Bricks were road material too. Brick pavement laid in Eastland County.

On June 3, 1938, Jake Roberts (now District 8 Engineer), Joe Gresham and Frank Pinget of District 14, pass on the merits of a shop-built pavement marker.

"The vehicle is built like a phaeton. It is propelled by a gasoline engine of 5-horsepower, secured in place under the seat. It consumed two quarts of gasoline in making the run to Dallas, and holds three gallons. The wheels are supported on enormous bicycle tires. The weight of the outfit is 1600 pounds. It was received from the East last Tuesday."

The number of car owners who followed Mr. Green over the bumpy, disconnected collection of ruts then serving as main roadways cried out for relief. Better roads were a must for the state to continue its rapid growth. Passable roads from farm to market and from church to school were absolute necessities.

Unsuccessful attempts were made by the Texas Legislature between the years of 1903 and 1911 toward creating a state organization that would have as its function the building of roads. In 1909 the Legislature provided for subdividing counties for the purpose of issuing and retiring road bonds. But the far-ranging drivers of the new-fangled contraptions weren't satisfied within county limits. The demand for state authority to control grew, and helped pave the way for more positive action during the following years.

Such was the status of Texas when the small group of men met at the

One of the first warehouses. Plenty of evidence it's a carry-over from a blacksmith shop.

Later version warehouse.

Stuck in the mud, Rio Grande Valley style. In this scene just south of Olmito in Cameron County, it was just get out and push boys, push.

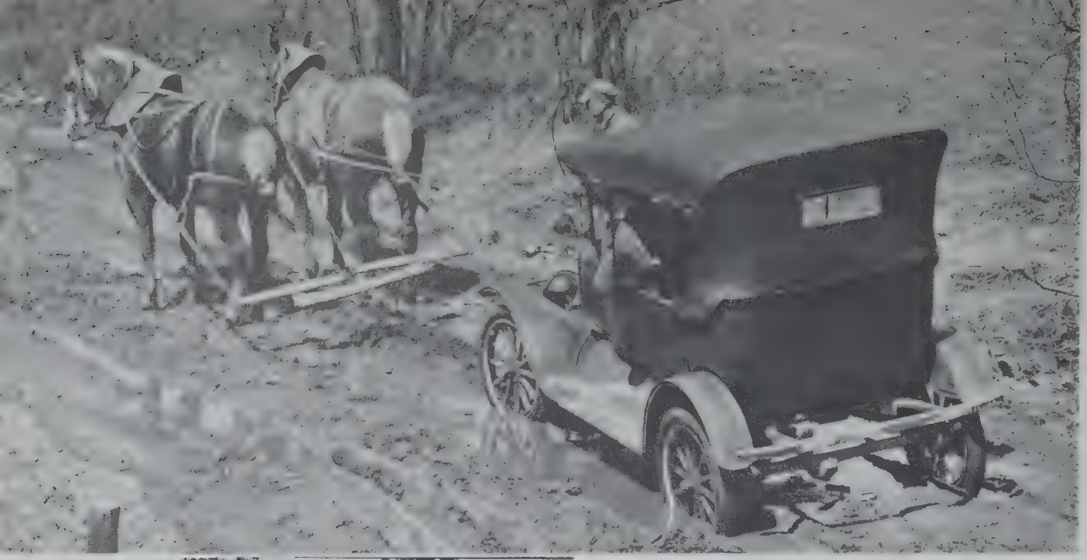
State Capitol in 1917. They were there in compliance with a law enacted by the National Congress of July 11, 1916. This was the Federal Aid Road Act, which provided the foundation for the present Federal and State cooperative program. Under this act, Federal money for highways was apportioned to the States on the basis of area, population, and mileage of rural deliveries on star routes: and apportioned funds were used to aid the states in construction of rural "post roads." The states were required to match Federal funds with their own money, and such funds had to be spent through highway departments capable of administering the funds. Federal aid was payable to a state to the extent of 50 per cent of the total cost of the road not to exceed $10 per mile, exclusive of the cost of bridges of more than twenty feet clear span. The State in turn gave 25 per cent to the county. With the adoption of this act. the State of Texas created a State Highway Department on April 4, 1917, this commission to be composed of three men with two-year terms.

The Commission was then given authority to appoint as its executive officer a competent civil engineer, who must be a graduate of some first-class school of engineering, and a department staff. No qualification or college degree was required then by the other engineers of the department. Senate Bill 74, passed by the Forty-fifth Legislature, required all engineers to be licensed. However, construction and maintenance of highways at this time was to be left in the hands of the local or county authorities.

When the State Highway Department began operations in a wing of the State Capitol in June of 1917, there was a staff of ten men. The policy body, whose duty it was to formulate policies and plans for the location and construction of a comprehensive system of roads in cooperation with counties, was made up of three men appointed by the Governor. The chairman was Curtis

1917 Red Seal, to be shown on front of the car with License plate. Due to the steel shortage at that time the license plates often did not arrive for long periods of time. This seal showed that the owner had applied for license and received certificate of registration.

The first type license plate issued by the Texas Highway Department, 1917.



Rains always helped the farmer. When it was too wet to plow, there was always the motorist willing to pay handsomely to be pulled through the mud holes.

The gentleman and his driver. The carbide lights and brass fixtures on this super-deluxe vehicle presented the driver a real polishing and repair problem.

Hancock, and the Commissioners Hugh C. Odle and Thomas R. McLean. The first state highway engineer was George A. Duren, who, under the direction of and with the approval of the Commission, was to prepare the plans for state highways and to carry out the policies and direct the work of the Department in general. Julian Montgomery was appointed Chief Office Engineer; D. E. Colp, Secretary to the Commission; and Vance Stockton became the first Chief Clerk. The first three Division Engineers were appointed in September: W. M. Fooshee at Mount Pleasant, John P. Meriweather at Abilene, and M. C. Welborn at Austin.

The first highway constructed under the auspices of the Texas Highway Department was a twenty-mile section between Falfurrias and Encino. The job was started in October, 1918. The first paving job let was from the Travis County Line to the Comal County Line. The job was started in July, 1918, with bituminous surface one-half inch thick and fifteen-feet wide.

The State Legislature passed many measures during those early years. The commissioners' terms were extended to six years, and were staggered so that each two years a new commissioner was appointed.

There was the first one-cent a gallon levy on gasoline in 1923. Three-fourths of this went to the Highway Department, and the maximum allotments to counties for road work increased. Counties still supervised construction and did the maintenance work; but effective in 1925, the Highway Department assumed maintenance and took over construction.

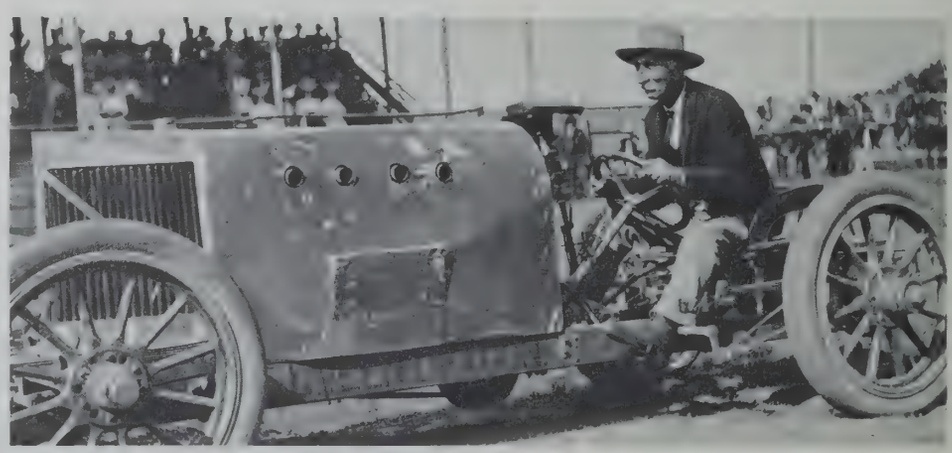
All funds from automobile registration fees went for construction, maintenance, and operation of the Department. The law provided that one-half of the registration fees collected by counties should be returned to the county, with the remainder of the total revenue being retained by the Highway Department for state work funds.

Better roads were built and there was more travel.

In the beginning there were no signs to direct traffic. Travelers simply had to stop and ask. In those days the question wasn't — as is asked today — which is the faster and better route, but does the road go all the way and is it passable. Possibly the first signs erected on Texas highways were put there by individuals living on the road who got tired of people asking them at all hours which road led where. The first highway signs or markings were strips around utility poles. In the early Twenties the poles began to leave the pavement edge and the Department began a plan to try placing direction signs on the roads. Some signs were erected to show dangerous curves and detours; however, the main emphasis was placed on directional signs. Each district made signs for local use, so there was no uniformity in any signs or markings. The signs of yesteryear were not works of art, but they served a purpose. From these small, crude signs reading "To Houston," or "To Dallas," grew great skylines. They were of humble beginning, but they pointed the way to progress.

The automobile was no longer a novelty, but a luxury.

Drivers were no longer looked upon



Hot rods and racers have always attracted fans of all ages.

as daredevils. Man had tamed the horseless carriage. Distance was no longer measured in how many flats, how many times you used low gear, how many times you got stuck in the mud, or repaired the "brake bands." People started talking in terms of miles and time, taking for granted the all-weather roads. In 1927 the gas tax was boosted to 3 cents. The ten-year-old Department saw improvement of primary highways as the most immediate problem, and they solved this problem with state highway funds coupled with revenue from local bond issues and Federal Aid.

The cost of maintenance grew and so did public demands for more paved roads.

In 1929 the gas tax went up once again, and changes were made in the distribution of registration fees which afforded the Department more operating income.

The automobile was no longer a luxury but a necessity.

Landmark actions in the Thirties occurred when the state assumed all bonded obligations outstanding on counties and their subdivisions for improvements on state highways. The need for special traffic facilities providing greater safety, comfort, and pleasure was realized and met. One of the nation's first roadside parks was constructed in Fayette County in 1933. As the state began planning and preparing for Centennial visitors in 1936, the Department provided Highway Travel Information Bureaus. Special signs and markers were improved and added for safety and guidance.

Highway planners realized that the farmers and ranchers should have some type of economical, hard-surfaced road which would enable them to bring their produce to the city markets the year round. The plans for building the Farm- and Ranch-to-Market roads were formulated. The first farm-to-market road was constructed in Rusk County between Mt. Enterprise and Shiloh, a distance of five and eight-tenths miles. The contract was let in April, 1936; however, at that time these roads were called lateral, or feeder roads. Soon the farmers envisioned the advantages these roads would offer: the mail would be delivered daily, school buses could operate rain or shine, and the city was only a few minutes from home.

There was no wavering in the progressive program until World War II curtailed activities in the twenty-

The Austin office of the Texas Highway Department in 1922, as caught by a roving photographer who specialized in group photos. J. D. Fauntleroy, Highway Engineer, is shown standing at extreme left. Eleven of the employees pictured here are still with the Department.

Seated on floor, first row (left to right) — S. Doug Johnson*, E. E. Pittman*, Dwight W. Hooper*, L. J. Nachtraub, Marshall Clements, C. S. Kinney*, E. W. Duval*, Oliver Loving, Jr., Egan Tausch, F. W. Gaines (seated against post); C. H. Kendall, Assistant Highway Engineer (standing by post).

Seated, middle row (left to right) — Travis Henderson*, Betty Logan, Katie Johnson Moore, Mrs. G. A. Bracher, Mrs. Clyde Smith, Ura Martin, Erin Bradfield*, Erin Jackson, Mrs. Ovid Rasor, Eva K. Potts, Madeline Morrey, Birdie Cannon Eccles (almost hidden), Mrs. J. D. Robison, Johnnie McGill Sullivan.

Men standing (left to right) — J. D. Fauntleroy, Highway Engineer; J. Wallace Francis, Dan Blake, R. J. Hank*, J. F. Dupre, John Shiels, S. S. Posey, C. A. Schutze, R. W. Budington, Roden Fuller, Gordon Lloyd, Floyd Kane*, V. R. Schmidt (back to post), Bert Hedick, F. M. Johnson, L. D. Asmus, G. G. Wickline (shoulder to post).

Women standing (left to right) — Marie Schutze Hefner, Mrs. Mabel McPherson Pierce, Frieda Swiedom*, Rena Reynolds, Terry Thatcher, Bessie Bergstrom*, Dell Jackson, Ray Krohn, Bessie Calloway Barnhart, Alene Calloway Johnson, Mrs. Anna Barnett, Mrs. Ione Whitlock, Virgie Thorpe.

*Still with the Department.

The year: 1940. The occasion: New State Highway Engineer D. C. Greer meets all his district engineers.

Reading from left to right on the first row are: D. C. Greer, State Highway Engineer; John B. Nabers, District 11; J. W. Puckett, District 21; E. C. Woodward, District 2; S. C. McCarty, District 19; S. J. Treadaway, District 8; J. G. Lott, District 4; George M. Garrett, District 5; T. W. Bailey, District 22; A. C. Gentry, District 10.

Second row: Leo Ehlinger, District 23; W. J. Van London, District 12; J. G. Rollins, District 18; J. M. Isbell, District 3; John E. Blair, District 17; P. S. Bailey, District 25; James E. Pirie, District 1; George B. Finley, District 16; R. E. Killmer, District 6; Clifton Rice, District 24; T. J. Kelly, District 20.

Third row: D. M. Puckett, District 9; M. C. Welborn, District 13; F. S. Maddox, District 15; A. F. Moursund, District 7.

third year of operation. From 1927 through August, 1940, the state expended $487 million on highways. The mileage jumped from around 5,000 miles of paved roads to 19,440 in 1940, and the annual expenditure from around $19 million to more than $40 million.

During World War II all construction was at a standstill. Even proper maintenance of the system was impossible because of the shortage of materials and manpower. At the end of the war the scars were many, and the Department began its own rehabilitation program. Expenditures for maintenance and construction leaped higher each year, and mileage grew from 27,000 in 1947 to 57,000 miles in 1957.

A large portion of this mileage increase—nearly 30,000 miles, was farm-to-market roads—but the greater portion of the expenditures went for alleviating city bottlenecks and for the construction of expressways and multilane highways.

The gasoline tax was increased to 5 cents by the 1955 Legislature with one-fourth going to the public schools and a portion to the counties. Under the new Federal Aid Act, Texas reached another milestone in the evolution of the highway system, and will have roughly three times as much money for construction. Texas and the nation are now entering the greatest and most gigantic roadbuilding era the world has ever known. The express highway is no longer confined to the city, but is being pushed across the state from east to west and from north to south. The interstate highway system when completed is destined to become a monument to our generation, making it possible for a motorist to travel from coast to coast and border to border without stopping. (See story in this issue, page 2.)

If someone could have portrayed today's highways to Col. Green some 58 years ago when he made his historic trip, he would probably have labeled it the prediction of a dreamer — a vision without basis — beyond the realm of possibility. If someone had envisioned the highways which would be developed during the next half century, the idea would certainly have been called fantastic.

Who knows what the future holds? The answer lies partly in future traffic needs, economic conditions, and above all, the ability to continue producing highway planners and builders capable of meeting this never-ending challenge. It has taken 40 years of brain work and sweat, plus a billion dollars to weld together one of the best highway systems in the nation. The road has been rocky all the way. The one ahead will undoubtedly be rocky too; but with the earned respect of the people and nearly a half century of experience the Department will continue paving the countryside and steering motorists safely and swiftly through the cities, villages, and outposts of Texas.

Two words could be used to sum up the history of the Texas Highway Department — conflict and cooperation. Two lines from the pen of Van Dyke could be used to sum up the past and future:

> "Follow and honour what the past has gained,
> And forward still, that more may be attained."

OVER THE HIGHWAYS

Comments . . . from the Traveling Public

● We liked particularly the wonderful highways and the fact that you could pass the large trucks without having to swing out into the path of oncoming traffic.

Waterloo, Iowa

● At *last* your roads are marked the same as the other 48 states. It was always so confusing. Your roads are very good.

Mrs. J. Dittrich
Los Angeles, California

● There are not enough four-lane roads for the long distances. It's getting better, though.

Atlanta, Georgia

● We liked the Highway Department of Texas. There was a courteous attendant giving information, and the best roads we have ever traveled.

Memphis, Tennessee

● On your open stretches there was only a 55 mile speed limit at night. I believe on good, open highway the speed limit should be 65 miles an hour, like on most eastern turnpikes and freeways.

Charles Ventenella
Los Angeles, California

● On Friday, April 26, 1957, my wife had her car stuck in the mud on the highway west of Marble Falls. In trying to extricate her car, my car also was in the same condition.

Two of your men, B. W. Hohmann and LeRoy McLain, very kindly came to her rescue and though they were off duty due to the fact that it was after hours and further, that they had to drive a long distance, they brought in a large truck with a winch and got them out.

They refused to accept any reward for the service, which they so richly deserved. I am sending you this letter to express my sincere gratitude to the Department and especially to these two men.

Dr. J. D. Stephens
Smithville, Texas

● There is a lack of historical markers. There's no advance warning about spots of interest. Your highways and highway markers were good.

Natchez, Mississippi

● We disliked the narrow roads where they were narrow. . .

Ferndale, Michigan

● We traveled during the flood season, and your information was perfect and made our trip very pleasant.

Max Sarasohn
Birmingham, Alabama

● A Motorist's Prayer — That the roads in heaven are as good as those in Texas.

Milwaukee, Wisconsin

● We liked everything in and about Texas, including the Natives. But there were yankees there posing as Texans.

Glendale, California

● It will be nice when the roads that are being built are completed. Some places the highways aren't marked too well. A few markers would help in places!

San Diego, California

● Your roads, as a rule, were very good, but we disliked the road work being done in hilly country with no warning signs or flagmen out. On several occasions we suddenly ran on workers who had posted no warning signs.

Miami, Florida

To and From Our Readers

FOR AMPHIBIOUS CARS ONLY?

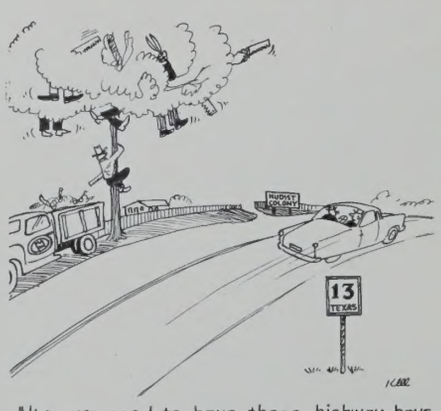
If you look carefully you'll see the highway in the left background — about 1,000 feet from the "Slow" sign and across close to a fifteen-foot depth of water. A good bit of water must have passed under this Brazos River Bridge on F.M. 51 after the sign was put up and before the picture was taken.

● You can never tell what sort of questions the Highway Department will be called upon to answer. Last year George Macon, head of the research department for Universal-International Pictures in California, wrote asking the procedure followed in Texas in ousting from public office an elected county officer. John Green, our Director of Claims, wrote a resume of procedure for the gentleman which, judging from the following reply, evidently met his needs:

". . . . I highly admire the versatility of your department, in no degree discounted by my assumption that its Director of Claims is an attorney. . ."

It's no wonder that "movies are better than ever;" the Highway Department is helping out.

We thought Ken Collinsworth had dreamed this month's cartoon up until we ran across the picture below in the late Mac Hodges' picture file. It seemed appropriate to accompany the cartoon.



"Its sure good to have these highway boys so enthusiastic about tree pruning!"

ABOUT THE COVER

When Spring comes to Central Texas, it brings with it a bright new dress for the winter-dulled live oaks, and for the prickly pears, buds bursting with the promise of a spectacular display of beauty. It lines the highways and dots the rolling hills with wild flowers, providing motorists with a striking display that changes with every turn of the wheels.

Our cover picture, showing a section of State Highway 29 between Georgetown and Liberty Hill, could be almost anywhere in Central Texas. Take away those hills and the rocky land and it would be almost impossible to place; the live oaks grow to some extent in almost every part of the state and the prickly pears observe no sectional or climatic boundaries.

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Mail all stories, remarks, or questions to TEXAS HIGHWAYS, Information and Statistics Division, Texas Highway Department, Austin, Texas.

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